

STATE BUILDING CODE COUNCIL

2024 Washington State Energy Code Development

Energy Code Proposal Short Form

For editorial Coordination, Clarifications & Corrections only,

without substantive energy or cost impacts

Log No. 24-GP1-295

Proponent Revision Rec'd 3/26/25

Code being amended:	Commercial Provisions	Residential Provisions
	(A MS Word version of the	code is linked to the name)

Code Section # TABLE C402.1.2 and TABLE C402.1.3

Brief Description:

This proposal moves the prescriptive R-value requirements for steel joist floors over unconditioned spaces per Table C402.1.3 Footnote "e" into the body of Table C402.1.3.

For the maximum allowed U-factor in the 2024 WSEC-C Table C402.1.2, a single value of U-0.029 is applied to "Joist/framing" floors and the code does not define material type.

The minimum required R-value in Table C402.1.3 for Joist/framing is R-30. Per ASHRAE 90.1-2022 for a wood-framed joist floor this equates to U-0.033.

Per Table C402.1.3 Footnote "e", the prescriptive R-value requirements for a steel-joist floor assembly is R-38 cavity insulation and R-10 continuous insulation. Per ASHRAE 90.1-2022 Table A5.3.3.1 this equates to a U-factor of U-0.024.

This proposal recommends revising the maximum allowed U-factor for all joist/framing floors to U-0.026 to align more closely with the steel-joist floor assembly defined in Footnote e and increases the minimum R-value requirement for a wood-joist floor assembly to R-38, which equates to U-0.026.

Proposed code change text: (Copy the existing text from the Integrated Draft, linked above, and then use <u>underline</u> for new text and strikeout for text to be deleted.)

TABLE C402.1.2

OPAQUE <u>BUILDING</u> THERMAL ENVELOPE ASSEMBLY

MAXIMUM REQUIREMENTS, *U*-FACTOR METHOD^{a, f}

	CLIMATE ZONE 5 AND MARINE 4			
	All Other	Group R		
Floors				
Mass ^e	U-0.031	U-0.031		
loist /framing	U-0.029	U-0.029		
Joist /framing	<u>U-0.026</u>	<u>U-0.026</u>		

TABLE C402.1.3 OPAQUE BUILDING THERMAL ENVELOPE INSULATION COMPONENT MINIMUM REQUIREMENTS, R-VALUE METHOD a,k,I

CLIMATE ZONE	5 AND MARINE 4			
	All Other	Group R		
Floors				
Mass ^f	R-30ci	R-30ci		
<u>Joist /framing</u>	R-30e	R-30 e		
Steel joist framing	<u>R-38 + R10 ci</u>	<u>R-38 + R10 ci</u>		
All other joist/framing	<u>R-38</u>	<u>R-38</u>		

For SI: 1 inch .= 25.4 mm. ci .= Continuous insulation. NR .= No requirement. LS .= Liner system

- a. Assembly descriptions can be found in Chapter 2 and Appendix A.
- b. Where using *R*-value compliance method, a thermal spacer block with minimum thickness of ½ inch and minimum R-value of R-3.5 shall be provided, otherwise use the *U*-factor compliance method in Table C402.1.4.
- c. Exception: Integral insulated concrete block walls complying with ASTM C90 with all cores filled and meeting both of the following:
 - 1. Not less than 50 percent of cores must be filled with vermiculite or equivalent fill insulation; and
 - 2. The building thermal envelope encloses one or more of the following uses: Warehouse (storage and retail), gymnasium, auditorium, church chapel, arena, kennel, manufacturing plant, indoor swimming pool, pump station, water and waste water treatment facility, storage facility, storage area, motor vehicle service facility. Where additional uses not listed (such as office, retail, etc.) are contained within the building, the exterior walls that enclose these areas may not utilize this exception and must comply with the appropriate mass wall R-value from Table C402.1.3/U-factor from Table C402.1.4.
- d. Where heated slabs are below grade, they shall comply with the insulation requirements for heated slabs.
- e. ((Steel floor joist systems shall be insulated to R-38 + R-10ci.)) Reserved.
- f. "Mass floors" shall include floors weighing not less than: 1.35 pounds per square foot or floor surface area; or 2.25 pounds per square foot of floor surface area where the material weight is not more than 120 pounds per cubic foot.
- g. Component performance in accordance with Section C402.1.5 shall be required for buildings with a mass transfer deck slab.
- h. ...

Purpose of code change:

Move a prescriptive envelope assembly requirement from a footnote into the body of the R-value and U-factor tables for easier reference. The proposal does not include a reduction or increase in code stringency.

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<u>Instructions</u>: For use with <u>Coordination, Clarifications & Corrections ONLY</u>. Send this form as an email attachment, along with any other documentation available, to: sbcc@ga.wa.gov. For further information, call the State Building Code Council at 360-407-9277.